

Name _____

Determining the Number of Moles and Molecules of Wax Burned in a Candle

Purpose – to burn candle wax and determine how many moles and molecules were reacted

Procedure:

1. Mass a glass plate or notecard. _____ g
2. Light a candle and drip a little wax onto the plate/card. Stick the candle to the plate and blow the candle out. Now find the total mass of the candle and the card. _____ g
3. Light the candle again and let it burn for 3 minutes, then extinguish the flame. Do not play with or touch the wax, it will influence your results.
4. Re-mass the candle and plate/card after the wax has cooled. _____ g

Data Table/Calculations

Complete the data table below with the data from the lab.

Mass of the Plate/Card (#1)	g
Mass of the Candle/Plate (#2)	g
Mass of the Candle/Plate After Burning (#4)	g
Mass of the Candle Before Burning (#2 - #1)	g
Mass of the Candle Before Burning (#4 - #1)	g
Mass of the wax lost (Mass Before – Mass After)	g

1. Wax is a mixture of carbon and hydrogen, called a hydrocarbon. Its formula is $C_{25}H_{52}$. The chemical reaction that took place in today's lab is shown below, balance it.



2. What kind of reaction is it? _____
3. Is it exothermic or endothermic? Why?

4. What is the molar mass of wax, $C_{25}H_{52}$?

5. How many moles of wax were present in the candle before it burned?

(SHOW ALL WORK WITH UNITS)

6. How many molecules of wax were present in the candle before it burned?

(1 mole = 6.02×10^{23} molecules)

7. How many moles of wax were burned?

8. How many molecules of wax were burned?

9. How long would it take to burn 1 mole of candle wax?